

Notice of Allowability	Application No.	Applicant(s)	
	09/872,166	BENTLEY ET AL.	
	Examiner Basia Ridley	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Terminal Disclaimer filed on 29 March 2004 & Supplemental Reply filed on 13 April 2004.
2. ☒ The allowed claim(s) is/are 55-57,59-65,67-79,82,84,86-92,97-103,106,108,110-116 and 121-128.
3. ☒ The drawings filed on 13 April 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>041304</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input checked="" type="checkbox"/> Other <u>Complete Listing Of All Claims.</u> |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Nicholas Pruhs on 13 April 2004.

The application has been amended as follows:

In the claims:

The claims were amended as shown in the Attachment.

In the specification:

Page 13, line 16, "(Cr₂O₃)" was deleted and inserted --(Cr₂O₃)--.

Page 14, line 22 "1" was deleted and inserted --3--.

Page 17, line 24 "80-84" was deleted and inserted --80, 82, and 84--.

Page 18, lines 12-13 "100-110" was deleted and inserted --100, 102, 104, 106, 108, and 110,--.

Page 18, line 19 "16 is" was deleted and inserted --may be--.

Page 18, line 31 "90, and 116" was deleted and inserted --90--.

Page 19, line 18 before "60," inserted --10,--.

Abstract on page 37 was replaced with the following:

-- A reformer for producing a hydrogen-rich gas includes a first zone, a second zone, a third zone, a fourth zone and a product gas collection space. The zones are sequentially adjacent. A

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flow path is provided for directing flow of a reaction stream in diverging directions from the first zone into the second zone, and continuing in the same general diverging directions through the second zone, third zone, and fourth zone. Directing the flow in diverging directions permits flow into and through a zone over more than just a single cross-sectional geometry of the zone or a single cross-section of the flow path transverse to the direction of flows. This configuration can be used to require a lower pressure for flowing the reaction stream so as to reduce the parasitic requirements of the reactor, and can also be used to increase throughput of the reactor.--

2. The following is an examiner's statement of reasons for allowance:

The closest prior art is Hsu et al. (USP 5,858,314), Tope et al. (USP 3,421,826) and Wilcox (USP 2,279,153), but the prior art does not disclose a hydrogen reformer comprised of a first zone containing a partial oxidation reactor, at least one other zone containing catalyst for promoting hydrogen generation and a diverging flow path from the first zone to the second zone. Therefore claim combination wherein hydrogen reformer comprises a first zone containing a partial oxidation reactor, at least one other zone containing catalyst for promoting hydrogen generation and a diverging flow path from the first zone to the second zone is allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. The drawings were received on 13 April 2004. These drawings are acceptable.


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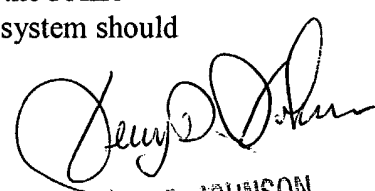
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Basia Ridley, whose telephone number is (571) 272-1453.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (571) 272-1444.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Technical Center 1700 General Information Telephone No. is (571) 272-1700. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Questions on access to the Private PAIR system should be directed to the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).


Basia Ridley
Examiner
Art Unit 1764


JERRY D. JOHNSON
PRIMARY EXAMINER
GROUP 1100

BR
April 14, 2004